Original Article

https://doi.org/10.1590/2317-6431-2021-2583

Audiology Communication Research
ISSN 2317-6431

Impact of orofacial pain on the quality of life of mouth and oropharynge cancer patients

Impacto da dor orofacial na qualidade de vida de portadores de câncer de boca e orofaringe

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ABSTRACT

Purpose: To investigate the impact of orofacial pain on the quality of life of patients with oral and oropharyngeal cancer. **Methods:** This is a cross-sectional, observational, descriptive study with a convenience sample. Thirty patients of both sexes participated in the research, aged between 35 and 75 years. For data collection, a sociodemographic questionnaire prepared by the researchers, the McGuill pain protocol, was used. **Results:** The experimental findings show us relevant results at different classification levels for orofacial pain. The greatest repercussions were found in social aspects, such as sleep (40%), appetite/food (78%), personal hygiene (55%) and leisure (40%), which were the sub-items that had the greatest impact on pain (or which were the sub-items mostly affected by pain), affecting the the quality of life of patients with oral and oropharyngeal cancer. **Conclusion:** Under these experimental conditions, it is concluded that patients with oral and oropharyngeal cancer present different levels of orofacial pain, and suffer impacts on their lives, especially in matters related to simple daily activities.

Keywords: Facial pain; Mouth neoplasms; Causalgia; Head and neck neoplasms; Speech Language and Hearing Sciences

RESUMO

Objetivo: investigar o impacto da dor orofacial na qualidade de vida de portadores de câncer de boca e orofaringe. **Métodos:** trata-se de um estudo de corte transversal, observacional, descritivo, com amostra de conveniência. Participaram da pesquisa 30 pacientes de ambos os sexos, na faixa etária de 35 a 75 anos. Para a coleta de dados, foi utilizado questionário sociodemográfico elaborado pelos pesquisadores e o Questionário de Dor McGill. **Resultados:** Os achados experimentais apresentaram resultados relevantes em diversos níveis classificatórios para dor orofacial. As maiores repercussões foram encontradas nos aspectos sociais, como em relação ao sono (40%), apetite/alimentação (78%), higiene pessoal (55%) e lazer (40%), que foram os subitens que tiveram maior impacto da dor na qualidade de vida dos portadores de câncer de boca e orofaringe. **Conclusão:** Portadores de câncer de boca e orofaringe apresentam variados níveis de dor orofacial e sofrem impactos em suas vidas, principalmente nos quesitos relacionados a atividades simples do cotidiano.

Palavras-chave: Dor facial; Neoplasias bucais; Causalgia; Neoplasias de cabeça e pescoço; Fonoaudiologia

Study carried out at Hospital Aristides Maltez – HAM, Liga Bahiana Contra o Câncer – LBCC – Salvador (BA), Brasil.
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Conflict of interests: No.
Authors' contribution: AGF was responsible for the study design and data collection; JMC was responsible for data collection and manuscript contribution; RDAS was responsible for the study design and data collection.
Funding: None.
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Received: October 01, 2021; Accepted: March 14, 2022

INTRODUCTION

Pain is an unpleasant sensory and emotional experience, according to the International Association for the Study of Pain. For pain classification, the physical, chemical, subjective and psychological aspects involved in the painful process can be considered. These aspects are crucial for the understanding and better indication of a possible treatment[1].

Pathologies that alter anatomofunctional structures, such as tumors located in the oral cavity, whether in the maxilla, mandible, cheek, oropharynx or nasopharynx, salivary glands or ear, will probably increase the risk of the patient developing orofacial pain, due to the stage of the tumor or the treatment performed to contain or cure the disease[1-3].

Orofacial pain can modify stomatognathic functions and, once one or more functions are compromised, there is a lack of homeostasis in the entire system. If the individual has pain in the orofacial region, it may limit orofacial motricity in functions such as chewing, swallowing and speaking, in addition to oral hygiene[4,5].

It should be noted that, depending on the type and impact it has on the facial region, pain can make even an accurate diagnosis difficult. In addition, changes in oral conditions and functions can lead to malnutrition and lack of energy, chronic periodontal disease and even damage to dental integrity, with a risk of osteoradionecrosis of the jaw, which affects the patient's quality of life[3,4,6-9]. In the literature, the presence of oral and oropharyngeal cancer, by itself, is already a marker for the complication in the functionality of movements of the orofacial structure[10].

The MPQ-McGill[11] (The McGill Pain Questionnaire) aims to study the application of standardized indicators to assess the impact of pain on patients' lives. Other authors, such as Chee et al.[12], have also carried out studies aimed at assessing pain in patients' lives, using tools, including the MPQ-McGill. In Brazil, the Portuguese version of the questionnaire was proposed by Pimenta and Teixeira and is called McGill Pain Questionnaire (Br-MPQ)[13], which has been used in studies that aim to assess the impact of orofacial pain on the quality of life of patients[14].

The Br-MPQ Pain Questionnaire[13] enables the inclusion of emotional or subjective aspects of everyday life in the definition of orofacial pain. In this version of the instrument, the impact of pain on the patient's life is assessed by sub-items classified as: social impairment, development of activities of daily living and patient's perception of the reaction of others to their painful condition.

Thus, the present study aimed to investigate the impact of orofacial pain on the lives of patients with oral and oropharyngeal cancer.

METHODS

This is a cross-sectional, observational, descriptive study, approved by the Ethics and Research Committee of the Federal University of Bahia – Institute of Health Sciences (ICS/UFBA) under CAEE number: 04083518.0.0000.0050 and approval 3,291. 270.

The inclusion criteria applied were: being monitored at Aristides Maltez Hospital – Bahia League Against Cancer (HAM/LBCC), where data were collected; having cancer (CA) of the mouth or oropharynx; be accompanied by the institution's Head and Neck and Speech-Language Pathology and Audiology services in the years 2018-2019; be 18 years of age or older; signature or fingerprint collection for the Free and Informed Consent Term (ICF). We excluded those who had a history of other diseases that could cause orofacial pain, such as neurological impairments and temporomandibular disorders (TMD) (other than cancer), and patients with a history of AC in other regions of the head and neck, who had undergone radiotherapy.

All participants complained of orofacial pain and interference in quality of life, and, after clinical medical evaluation, it was found that it was due to trismus, temporomandibular disorder and myalgia, resulting from the tumor or its stage.

The evaluation process began with anamnesis (collection of personal, social and history of other diseases) and the sociodemographic questionnaire (prepared by the researchers). Both were composed of questions such as patient identification data, clinical history – if orofacial pain was present -, performing of other treatments or not, pain clinic and measurement of the vertical opening of the mandible. In addition, information such as family income, based on classes A, B, C, D and E of the Brazilian Institute of Geography and Statistics (IBGE), consumption of alcoholic beverages or other licit or illicit drugs, as well as general health data, such as hypertension, diabetes, hypercholesterolemia, previous ICU admissions, barotrauma, cancer treatment in the same region, cerebrovascular accident (CVA), traumatic brain injury (TBI), previous airway infections, kidney disease, chemotherapy, radiotherapy and head and neck surgery . Responses that could not be collected with the patient were collected with the companion and confirmed in the medical record.

The assessment of the impact of orofacial pain on patients' lives was measured through the specific responses of the Br-MPQ Pain Questionnaire (Brazilian version of the McGill Pain Questionnaire)[13]. The questions were directed to the patients and their answers were filled in by the investigator, due to the time and low education level of most of them, in order to make the protocol application form egalitarian.

In the first part of the Br-MPQ[13], the impact of orofacial pain on the patient's life was indicated in sub-items of the questionnaire categories: (1) social impairment, (2) activities of daily living and (3) perception of the other, with the possibility of responses of scores 1, that pain "does not influence daily life"; 2, which "influences a little"; 3, which influences "more or less"; 4, which influences "a lot" and 5, which influences "totally/always". In the second part, the possible answers to the other questions: (4) "Tolerance to pain?": "it is not difficult", "it is a little difficult", "it is difficult", "it is very difficult", "it is impossible" ; (5) "Do you feel sick?", with the possibility of choosing between the alternatives: "no", "a little", "a lot" and "totally"; (6) "Do you feel useful?", with the possibility of choosing between: "yes", "less than before", "useless", "very useless" and "totally useless" and (7) "Is your life satisfactory? ", with a choice between the answers: "yes", "partly", "unsatisfactory" and "completely unsatisfactory". It was explained in the process that only one number or one statement could be chosen in each of the sub-items.

Time control was not applied for the complete completion of the questionnaire, in order to make the process as comfortable as possible for the patient in the presentation of the answers. In

addition, the time to complete the application of the complete questionnaire was 20 minutes, on average.

For the analysis of data related to the impact of pain on the patient's life in the sub-items of the questionnaire categories, descriptive analysis was used, with mean and standard deviation, in addition to the frequency distribution of the data obtained, depending on the variable evaluated.

RESULTS

Thirty volunteers participated in the study, 21 males and 9 females, aged between 35 and 75 years, mean age 56.88 years and standard deviation of ±10.4. Among the participants, 25 (84%) reported being former alcoholics and former smokers and 25 (84%) self-declared as belonging to the socioeconomic class "E" (up to 2 minimum wages of family income).

Patients had a medical diagnosis and were referred for the proposed treatment, around 15 days after hospital admission in the triage, with an average of 20 days to start treatment, after diagnosis. Among them, 97% underwent combined treatment (17% underwent surgery, chemotherapy and radiotherapy and 80% underwent chemotherapy and radiotherapy, with an average of 4 chemotherapy cycles and 38 radiotherapy sessions); 3% underwent surgery only (Figure 1).

The sample consisted, for the most part, of patients with advanced tumors (T3 and T4 staging). The characterization of the research participants, in site and staging, according to the TNM (Classification of Malignant Tumors) of the tumor, are described in Table 1.

The results with scores from 1 (no pain in the questioned items) to 5 (greater impact of pain on the questioned items) of the answers to the McGill protocol questions are distributed in Table 2.

In the subsection "social harm", the sub-item "in leisure" had the worst rate of disadvantage in relation to orofacial pain reported by the participants. Among all protocol sub-items, the one that had the worst performance was "appetite/alimentation", evidencing the greatest impact of orofacial pain. The results regarding the impact of orofacial pain were higher in the subsection "activities of daily living", mainly food, personal hygiene, sleep and leisure (Table 3).

In sub-item (4) "tolerate pain", 40% of the participants chose the descriptor "it is very difficult"; in sub-item (5) "do you feel sick?", 35% of the participants chose the descriptor "totally"; in sub-item (6) "do you feel useful?" 47% of the participants chose the descriptor "less than before" and in the last sub-item, (7) "is your life satisfactory?", 45% of the participants chose the descriptor "yes".

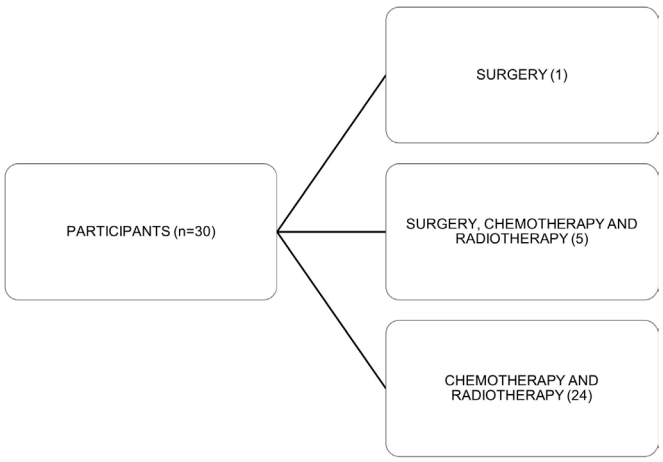

Figure 1. Flowchart of study participants and their respective treatments performed
Subtitle: n = number of participants

DISCUSSION

The data from this research showed that patients with oral and oropharyngeal cancer have different levels of pain and impacts on quality of life, factors that need to be evaluated and patients referred for treatment, which is in line with the study by Shao et al.[15] and van der Geer et al.[16], in which they point out that chronic pain can produce biological, psychological and social effects and that, regardless of the factors generated by pain, all these factors must be considered in the evaluation performed by the professional, and may even, direct the referral of the patient to rehabilitation.

Daily activities (such as eating, for example), when not performed, or when they are interfered with in chewing, can generate parafunctional habits and TMDs[6], in addition to harming the subject in the absorption of nutrients, which can cause cases of anemia. or metabolic diseases, malnutrition, dehydration, dysphagia, worsening of the underlying disease. In addition, they affect the pleasure around food, restricting the subject's participation in family meetings, get-togethers, events in general, which have social and food interaction and are part of leisure. Such orofacial myofunctional functions can be rehabilitated with the work of a speech therapist present in the multidisciplinary team[5,7].

In addition to diet, orofacial pain impairs oral hygiene, directly affecting the quality of oral health, allowing the emergence of

Table 1. Characterization of the tumor site and staging of the research participants (n=30)

Tumor site	Staging	Tumor site	Staging
Tonsil r.	T2N3M0	Nasopharynx	T4N2M0
Tonsil r.	T3N2M0	Oropharynx	T2N1M0
Tonsil l.	T3N0M0	Oropharynx	T3N0M0
Tongue	T2N1M0	Oropharynx	T3N0M0
Tongue	T3N1M0	Oropharynx	T3N1M0
Tongue	T4N2M0	Oropharynx	T3N2M0
Tongue	T4N2MX	Oropharynx	T3N2M0
Maxilla	T1N0M0	Oropharynx	T3N2M0
Maxilla	T4N0M0	Oropharynx	T3NXMX
Maxilla	T4N0M0	Oropharynx	T4N2M0
Maxilla	T4N2M0	Oropharynx	T4N2M0
Rhinopharynx	T4N0M0	Oropharynx	T4N2M0
Rhinopharynx	T4N2M0	Oropharynx	T4N2M0
Nasopharynx	T3N2M0	Oropharynx	T4N2M0
Nasopharynx	T3N2M0	Oropharynx	T4AN2AM0

Subtitle: n = number of subjects; r. = right; l. = left; T = characteristics of the primary tumor; N = characteristics of the lymph nodes of the lymphatic drainage chains of the organ where the tumor is located; M = presence or absence of distant metastases (TNM Malignant Tumor Classification System)

Table 2. Distribution of total scores of participants' responses to the McGill Pain Protocol

Pain affects	Daily life activities	Perception of the other	Tolerate the pain	Do you feel sick?	Do you feel useless?	Is your life satisfactory?
3	4.7	1	3	1	2	1
1.8	2.7	1	4	4	2	2
2.7	4.3	1	4	2	1	1
4	4.7	4.5	5	1	2	1
4.7	3.7	5	5	2	2	1
3.5	4.3	1	3	4	2	3
3	4.7	0.8	4	3	4	1
4	4.2	1	3	4	5	2
3	2.3	2	1	1	2	2
4	2.7	2	5	4	2	1
3.5	4.7	4	4	4	1	1
3	5	2	5	4	5	4
3.8	4.4	1	5	4	2	3
5.2	4.7	4	5	4	4	3
3.5	4	4	4	3	2	2
3.8	2.4	1	2	1	1	1
4.7	4.3	1	4	3	2	2
1.6	2.5	1	1	3	3	3
5.2	4.7	4.5	5	4	5	4
2.6	2.6	1.3	2	1	1	2
2.5	3.4	1	4	1	2	1
1	3.8	1	4	4	4	1
3.3	1.8	1	3	2	1	1
2.2	1.6	1	1	2	1	3
1	1.6	1.5	3	1	1	1
5	3.4	1	4	2	2	2
2.8	4.7	1	3	2	2	2
3	4.7	1	4	1	5	2
4.7	3.3	1	4	2	1	1
2	3.4	1	2	2	2	2

Table 3. Distribution of frequencies of responses from patients with oral and oropharyngeal cancer, on the impact of orofacial pain in the sub-items of the McGuill Pain Questionnaire (n=30)

Items/Sub-items	Pain Classification				
1- Social harm: pain affects	**No (%)**	**A little (%)**	**More or less (%)**	**A lot (%)**	**Totally/Always (%)**
At work	73	10	3.5	0	13.5
At leisure	33	10	17	0	40
In daily home activities	40	10	20	5	25
In familiar relationship	37	10	14	14	25
In relationship with friends	45	10	10	7	28
2- Activities of daily living: pain affects					
Sleep	17	3	27	13	40
Appetite/Alimentation	4	4	7	7	78
Personal hygiene	15	5	20	5	55
Dress up	80	5	0	0	15
Locomotion	80	5	0	5	10
3- Perception of the other: People					
Get irritated with me	64	9	9	9	9
Express frustration	65	10	0	5	20
Feel angry with me	75	10	0	5	10
Ignore me	75	10	5	5	5

Subtitle: n = number of subjects; % = percentage

other correlated complications, such as, for example, halitosis, periodontal diseases, caries, gingivitis, mucositis, among other comorbidities related to events of bactericidal and fungicidal proliferation, in addition to leading patients to avoid facial movements, which may lead to orofacial myofunctional disorders in the facial and oral muscles and cases of trismus[4-6,8,17].

In addition to the aforementioned factors, sleep interference can lead to insomnia, anxiety, agitation, drowsiness, indisposition during the day, feeling of disability, due to excessive tiredness, depression and that favor the presence of other psychiatric diseases, affecting, also, the mental health of the subjects[3,4,6,8,17-20].

The results of this study are in line with other studies that indicate that the frequency of patients with mouth and oropharynx tumors is mostly male, mainly according to data from the National Cancer Institute (INCA) for the 2018-2019 biennium[10]. Almost all study participants were alcoholics and smokers, and the literature points to smoking as one of the predictors for tumors worldwide, even more associated with economic vulnerability that also contributes to such findings[12,17-19].

The present study showed that the physical requirements had already been pointed out by Pimenta and Teixeira[13] and Shen et al.[14] as influencing the quality of life of patients, using the same tool used in this research. It is worth considering that the Br-MPQ is not intended to measure quality of life, even though it is a multidimensional tool in terms of pain classification. Shen et al.[14] describe other findings with this tool and allow its use to quantify and monitor the evolution of orofacial pain and, respectively, the impact on patients' lives.

Pain intolerance was an important finding, considering that the most chosen answer was "tolerating pain is very difficult". This result is related to the fact that patients with advanced tumors present impairments that alter orofacial and cervical motricity, affecting vertical mandible opening and chewing, among other factors[17,19,20].

Findings related to decreases in the level of activity were high, when related to the feeling of dissatisfaction with life, which, in turn, had relatively lower numbers[17-19]. Other studies associate the limitation of social life and emotional well-being with orofacial pain[20,21].

Lastly, as a limitation of the research, it is pointed out the difficulty of adding more participants, due to sociodemographic factors and the limitation in direct referral to the Speech-Language Pathology service, during the period of execution of the study. It was also difficult to find more studies focused on head and neck cancer (HNC), which had directly discussed orofacial pain, in order to compare the findings with the literature in the same audience.

Therefore, it is suggested that further studies be carried out to assess the impact of orofacial pain on the lives of subjects, especially in the area of HNC, either with the protocol used in this research, or with other similar protocols, analyzing the possibility of a greater number of participants, with the purpose of collaborating for greater scientific evidence in the area of pain research.

CONCLUSION

Orofacial pain results in different impacts on the lives of patients with oral and oropharyngeal cancer, a condition that has different sensory levels and induces disadvantages in correlated aspects, especially regarding to appetite/alimentation, personal hygiene and leisure.

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